distilled water and the water is removed by vacuum filtration. The mixture is then mixed with a spatula and some material is placed in a 0.25 inch diameter compression mold and compacted to 43.6 KSI at 36° C. for 10 hours.

A portion of the remaining powder mixture is placed in a "Baker-test your adaptation" lucite mold and compacted and consolidated using dental tools for compacting and burnishing. The mold and consolidated intermetallic powder, which develops a shiny, metallic appearance, is annealed overnight at 40° C. The sample, AGSN19, is x-rayed and the resulting x-ray diffraction spectrum is shown in FIG. 3. The Knoop hardness of AGSN19 is shown in Table I.

Example 4

A 1:1 solution of 1.0×10^{-2}M $AgNO_3$, 1.0×10^{-3}M thiourea and 1.3×10^{-3} M $AuCl_2$ is prepared by combining 25 cc of the 1×10^{-2} M $AgNO_3$, 1×10^{-3} M thiourea solution as prepared in Example 1 with 25 cc of 1.3×10^{-3} M $AuCl_2$ solution as used in Example 2. The resulting 50 cc of solution are filtered through a fine Buchner filter.

0.4772 grams of pure Sn powder prepared above are weighed and combined with a weighed 1.9090 gram sample of Indium powder. The two powders are weighed in plastic test tubes, and manually mixed. Indium powder is broken up manually. The manually mixed powders are then mixed using a dental "shaker" (such as a "Wig-L-Bug Amalgammator," Model LP-60, from Crescent Dental Mfg. Co.) for 30 seconds. A 1.0 gram weighed sample of the Sn-In intermetallic powder is placed in a 0.25 inch diameter mold and compressed to 21 1 KSI at room temperature for 10 minutes. After 4 minutes, the pressure drops, but continuous and subsequent pumping returns the pressure to 21KSI. Upon removal from the compression mold, the material is reacted, is liquified and forms a thin foil specimen within the mold. A small round sample is cut from the foil specimen, INSN1, and an x-ray diffraction pattern obtained. The resulting diffraction spectrum is shown in FIG. 4. The Knoop hardness results are shown in Table I.

Example 5

Small granular Ga material is prepared for use by smashing between the polished ends of two stainless steel cylinders (approximately 1.5 and 2cm in diameter). 0.3207 grams Sn powder are weighed in a plastic test tube and 0.9616 grams Ag powder are weighed and added to the plastic test tube. The resulting combined powder is mixed well with a Vortex-Genie dental mixer for approximately 30 seconds. A 0.06044 gram sample of the above crushed Ga is weighed out and a small particle of the crushed Ga (approximately 1 mm diameter) is placed in a "Baker" plastic mold. A small amount of the 3:1 Ag-Sn powder prepared above is added, mixed and then compressed with dental tools. One additional specimen is prepared in a like manner. A third compact intermetallic is layered until a small "pill" is formed. The specimens are labeled DL1 , DL2 and EE1 , respectively. Micrographs for the above specimens (DL1, DL2 and EE1) are shown in FIGS. 5*a* and 5*b*, 6*a* and 6*b* and 7*a* and 7*b*.

TABLE I

Calculated Hardness Values Using 50 g Load (Except Where Indicated)

+++++++ Comminuted Alloys +++++++

Specimen	Dial Units	Calculated Knoop Hardness (K/mm^2)	Average
AGSN7	503	61.6	53.6
	584	45.7	
AGSN19	572	47.6	46.9
	581	46.2	
INSN1 (5 g load)	926	1.8	1.9
	878	2.0	

What is claimed is:

1. A process for preparing an intermetallic alloy body comprising the steps of:
   a) coating a first powder of at least one member selected from the group consisting of elemental metallic, alloy and intermetallic compounds with an oxide-replacing metal; and
   b) compacting the coated first powder or a mixture of an elemental metallic second powder and the coated first powder without adding a liquid sintering agent to form an alloy body in situ.

2. The process according to claim 1 wherein the compacting of the coated first powder and elemental second powder is done by hipping.

3. The process according to claim 1 wherein the compacting of the coated first powder and elemental second powder is done by hot pressing.

4. The process according to claim 1 wherein the coated first powder is coated Sn and the elemental second powder is Ga.

5. The process according to claim 4 wherein the Ga and Sn are used in an atomic ratio of about 1:20.

6. The process according to claim 1 wherein the coated first powder is a coated Ag-Sn intermetallic and the elemental second powder is Ga.

7. The process according to claim 1 wherein the compacting takes place at a temperature below the melting points of the coated first powder and the second powder and under an applied pressure.

8. The process according to claim 7 wherein the temperature is in a range of from about 20° C. to about 100° C. and the applied pressure is in a range of from about 20 KSI to about 75 KSI.

9. The process according to claim 7 wherein the applied pressure ranges from about 20 KSI to about 75 KSI.

10. A process for preparing an intermetallic dental restoration comprising the steps of:
   a) coating a first powder of at least one member selected from the group consisting of elemental metallic, alloy and intermetallic compounds with an oxide-replacing metal; and
   b) compacting orally, in situ, the coated first powder or a mixture of an elemental metallic second powder and the coated first powder without adding a liquid sintering agent to form the dental restoration.

11. A process for preparing an intermetallic alloy body comprising the steps of:
   a) coating a first powder of at least one member selected from the group consisting of elemental metallic, alloy and intermetallic compounds with an oxide-replacing metal; and